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(57) Abstract :

The present invention introduces a system and a method for optimizing content caching in a network environment. The system utilizes a plug-n-serve device embedded with a QoE aware content caching and delivery scheme algorithm. This algorithm employs advanced network analysis techniques to identify frequently accessed and popular content. Centrality values are calculated for routers in the network, and content is strategically cached at routers with high centrality values and content popularity. By caching popular content closer to content requesters, the system improves network performance, reduces content retrieval delay, and minimizes bandwidth utilization. The plug-n-serve device acts as a caching agent, implementing the caching strategy in real-time. The method includes monitoring network traffic, analyzing content demand patterns, calculating centrality values, and selecting optimal caching locations. The invention offers advantages such as improved network efficiency, enhanced user experience, and superior content retrieval optimization.

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